

## New rooms for blended learning

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# New rooms for blended learning

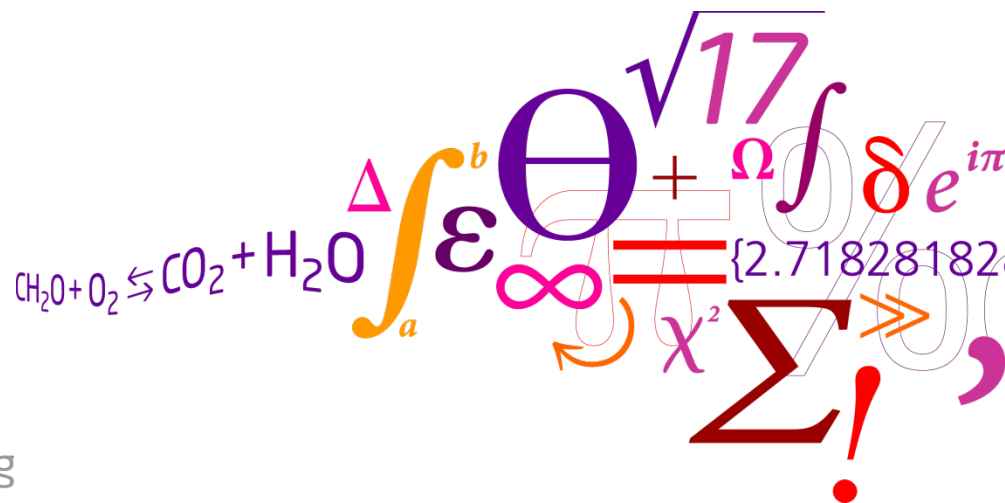
## - a case study

Lauge Clausen – Ph.D.-fellow at DTU Env.

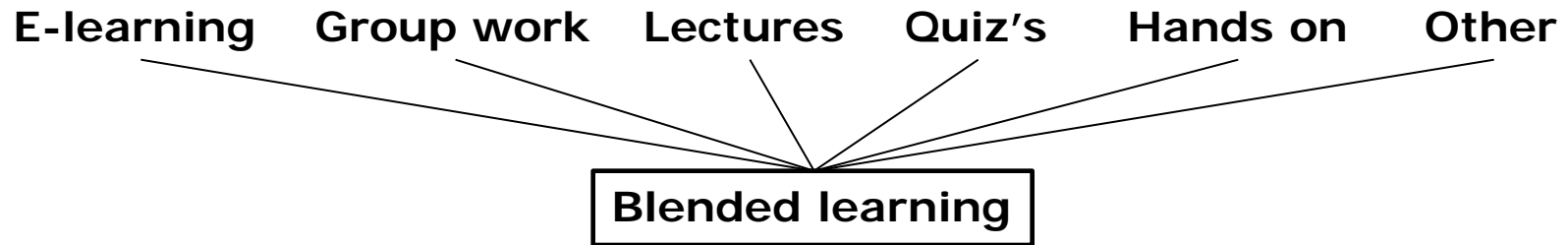
Steffen Foss Hansen – Associate professor at DTU Env.



(University of Wisconsin-Madison, 2015)



# Blended learning improves learning output



Consensus that blended learning markedly improves the learning outcome

Bonk and Graham (2012), So and Brush (2008), Pereira JA et al. (2007), López-Pérez et al. (2011), Heba and Nouby (2008), Kazu and Demirkol (2014) and Boyle et al.(2003) and many more...

# The physical surroundings

What does the physical surroundings do to blended learning?

We know a lot about working environment...

... but is there is a natural limit to what you can achieve with blended learning dependent on room and interior design?

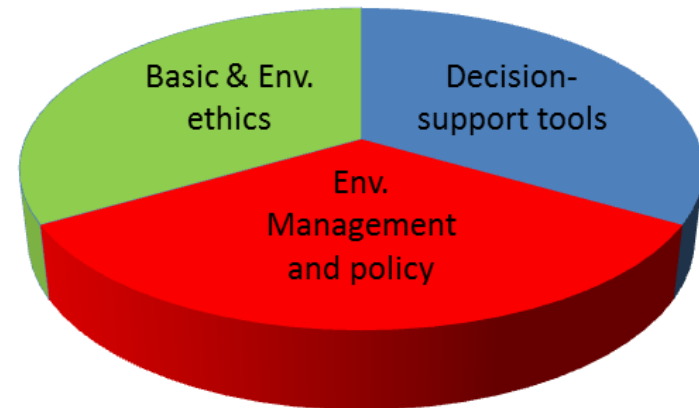
**Do our traditional teaching rooms facilitate blended learning sufficiently?**

# Course 12240

## Environmental management and ethics

- Taught since 2003  
(2010 in the present form)
- Master level
- Approx. 70 students
- 5 ECTS points (60 ECTS/year)
- Duration: 3 weeks during Jan.
- Multi-cultural class

**Course composition**



Blended learning is implemented by: (Interactive) Lectures, quiz's, debates, different types of group work and workshops, reading material, literature review, reports.

# The traditional classroom (2010-2014)



Traditional classroom



Additional work space  
for group work

# Feedback from the students 2010-2014

## ***Comments about the room:***

*"A lecture room with more daylight."*

*"Poor room for debates."*

*"Fun to discuss but not in a lecture hall with 60 people."*

*"Completely wrong to do that much class room lectures with 70 students"*

*"Bad akustics in the auditorium."*

*"This course calls for a lot of discussion and interaction which is favored on a different setting."*

# Feedback from the students 2010-2014

## ***Other comments:***

*"Generally a ok class"*

*"It's a very dynamic course."*

*"It is good that the debates have been in different ways."*

*"The lectures have been a little bit static."*

*"The standard of the lectures."*

*"Too many people in a very big room."*



# The new teaching facilities



New classroom



Additional work space for group work

# Impression of the room in use



# Our observations and experiences

Much more engaged students

Happier students

More dynamic class

Shifts from class room lectures to group work or workshop activities

Better discussions (initiated by small group discussions)

The working env. was markedly better in the new room

# Feedback from the students 2015

## ***Comments about the room:***

*"The facilities, e.g. the room, were perfect."*

*"Great facilities and lovely learning environment."*

*"The room is very cold."*

# Feedback from the students 2015

## ***Other comments:***

*"I loved the dynamism of the course."*

*"Lectures worked well."*

*"Good with class exercises eg posters."*

*"The structure of the lecture strongly involves students."*

*"I think it is a wonderful idea with the Socratic questions."*

*"Good with mid-term quiz."*

*"Group work :)"*

*"In general good quality lectures."*

# Interview of the students 2015

## *Other comments:*

An interesting room.

Felt like at home.

Room to move around and make smaller learning env.

Highly value the combined lecture- and group room.

Great light and indoor climate.

Good acoustics.

## *Links to interview's:*

<https://www.youtube.com/watch?v=mZfRmyM3-Y8> (Steffen Foss Hansen presenting the room, English)

[http://podcast.llab.dtu.dk/fileadmin/podcasts/TempVideoer/Aud73Byg421\\_StudEva-720p.mp4](http://podcast.llab.dtu.dk/fileadmin/podcasts/TempVideoer/Aud73Byg421_StudEva-720p.mp4) (Student interview, Danish)

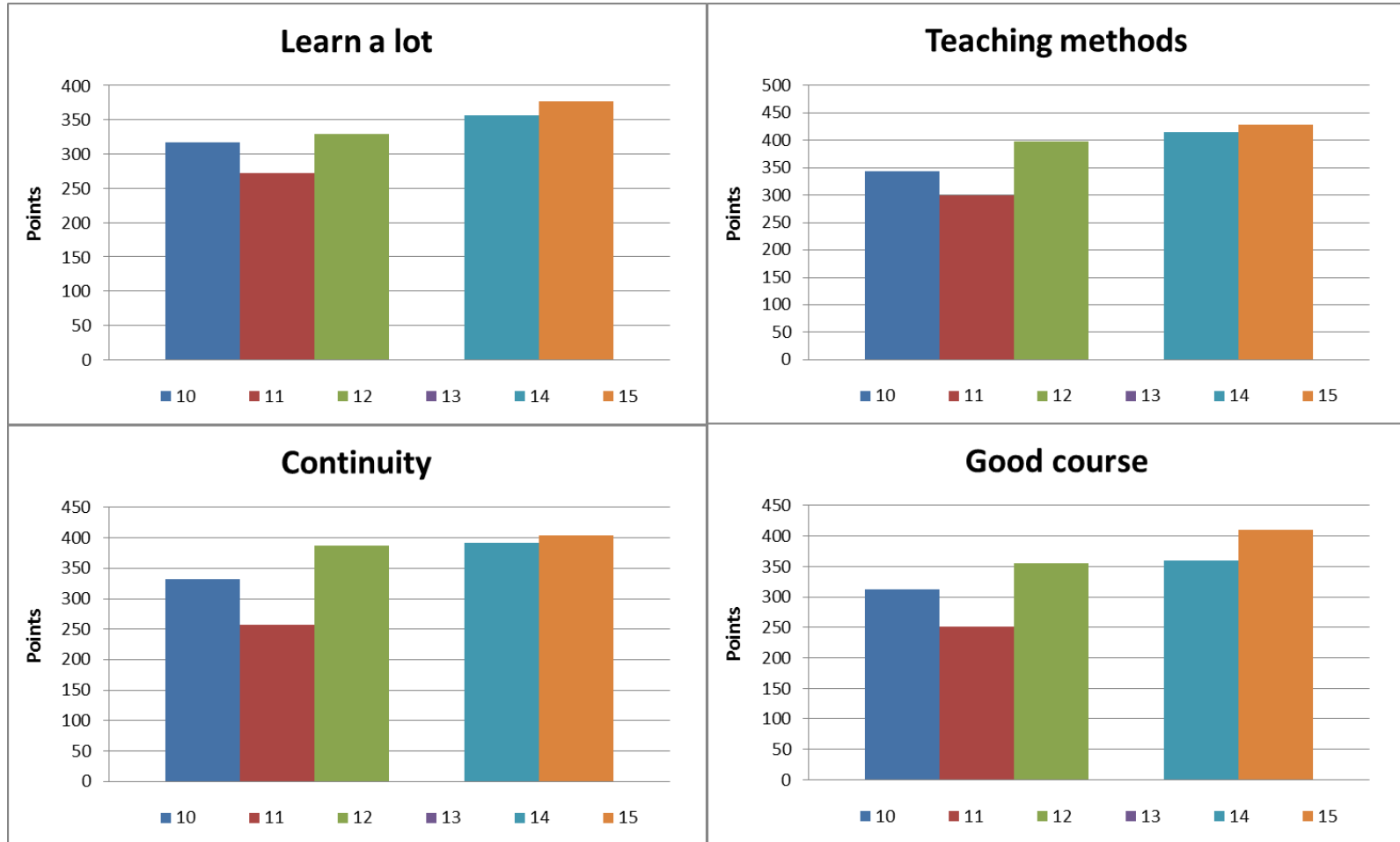
# Results of the questionnaire

Question	Year/point	5	4	3	2	1	Tot. points
I think that I learn a lot in this course	2010	9	29	38	18	6	318
	2011	2	23	35	23	16	272
	2012	16	38	18	18	11	329
	2013	-	-	-	-	-	-
	2014	17	42	25	15	2	356
	2015	23	44	23	8	2	377
I think the teaching method encourages my active participation	2010	21	38	15	18	9	344
	2011	9	28	30	19	14	300
	2012	47	27	11	9	7	398
	2013	-	-	-	-	-	-
	2014	46	35	10	4	4	415
	2015	56	33	0	4	6	429
I think the teacher/s create/s good continuity between the different Teaching activities	2010	9	32	44	12	3	332
	2011	0	24	29	29	19	257
	2012	29	44	16	7	4	387
	2013	-	-	-	-	-	-
	2014	28	45	21	4	2	391
	2015	38	42	13	4	4	404
In general, I think this is a good course	2010	12	33	18	27	9	312
	2011	2	19	26	35	19	251
	2012	27	38	9	18	9	356
	2013	-	-	-	-	-	-
	2014	19	49	17	2	13	360
	2015	38	40	19	4	0	410

Total points ranges from 100-500



# Results of the questionnaire in graphs





## Conclusion

1. Student satisfaction is much higher when the room fits its purpose
2. Teaching location/physical environment matters more than we think when it comes to blended learning (Specially for large classes)
3. It seems like there exists an upper limit for what you can achieve with blended learning if the teaching rooms don't support it

**New rooms for blended learning**

# Questions

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